

Volcanoes ▪ *Guided Reading and Study*

Properties of Magma

This section explains physical and chemical properties, the property of viscosity, and the factors that determine the viscosity of magma.

Use Target Reading Skills

As you read about the viscosity of magma, fill in the detail boxes that explain the main idea in the graphic organizer below.

Main Idea		
Magma's viscosity depends on . . .		
Detail	Detail	Detail

Physical and Chemical Properties

1. A substance that cannot be broken down into other substances is called a(n) _____.
2. Is the following sentence true or false? When frozen water melts, it is undergoing a physical change. _____
3. Circle the statements that indicate a chemical property.
 - a. Water boils at 100°C under normal conditions.
 - b. When paper is burned, it forms ashes.
 - c. An iron chair will develop rust if oxygen combines with the iron.
 - d. A basketball is larger than a baseball.

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Properties of Magma *(continued)*

What Is Viscosity?

4. Fill in the blanks: The greater the viscosity, the _____ a liquid flows. The _____ the viscosity, the more easily a liquid flows.
5. Circle the liquids that have a relatively low viscosity.
 - a. milk
 - b. molasses
 - c. ketchup
 - d. orange juice
 - e. milkshake

Viscosity of Magma

6. What factors determine the viscosity of magma? _____

7. Circle the letter of each sentence that is true about silica.
 - a. It is formed from oxygen and nitrogen.
 - b. It makes magma thicker.
 - c. It is rarely found in the crust.
 - d. It produces light-colored lava.
8. The rock _____ forms from light-colored lava.
9. Low-silica magma forms rocks like _____.
10. What happens to viscosity as temperature increases? _____

11. Hot, fast-moving lava is called _____.
12. Cool, slow-moving lava is called _____.

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13. Complete the compare/contrast table to organize the physical and chemical properties of the different types of magma.

Viscosity of Magma	Temperature	Silica Content
High	b.	c.
a.	higher	d.

- e. State the relationship between temperature and silica content in magmas that have high viscosity and magmas that have low viscosity.
